WE CLAIM

1. A printhead chip for an inkjet printhead, the printhead chip comprising

a substrate; and

a plurality of nozzle arrangements that is positioned on the substrate, each nozzle arrangement comprising

a nozzle chamber structure that is positioned on the substrate and that defines a nozzle chamber from which ink is to be ejected;

an ink-ejecting mechanism that is operatively arranged with respect to the nozzle chamber structure, the ink-ejecting mechanism including at least one moving component that is displaceable to generate a pressure pulse within the nozzle chamber to eject ink from the nozzle chamber;

an actuator that is positioned on the substrate and that has at least one working member that is of a material having a coefficient of thermal expansion such that the, or each, working member is capable of substantially rectilinear expansion and contraction when heated and subsequently cooled; and

an energy transmitting means that interconnects the, or each, moving component and the, or each, working member so that energy generated by the, or each, working member as a result of expansion and subsequent contraction of the, or each, working member is transmitted to the, or each, moving component resulting in displacement of the, or each, moving component and generation of said pressure pulse.

2. A printhead chip as claimed in claim 1, which is the product of an integrated circuit fabrication technique.

3. A printhead chip as claimed in claim 2, in which the substrate includes a silicon wafer substrate and a CMOS drive circuitry layer positioned on the silicon wafer substrate.

4. A printhead chip as claimed in claim 3, in which each actuator includes one elongate working arm that has a fixed end portion and a working end portion, the working arm being configured to define part of a resistive heating circuit, the working arm also being electrically connected to the drive circuitry layer so that a current pulse can be set up

in the working arm to displace the working end portion relative to the fixed end portion upon heating and subsequent cooling of the working arm as a result of the current pulse.

5. A printhead chip as claimed in claim 4, in which each nozzle chamber structure includes nozzle chamber walls and a roof positioned on the nozzle chamber walls, the roof defining an ink ejection port from which ink is ejected upon generation of said pressure pulse.

6. A printhead chip as claimed in claim 5, in which each ink-ejecting mechanism includes one moving component in the form of an ink-ejecting member that is positioned in the nozzle chamber and is displaceable towards and away from the roof to generate said pressure pulse.

7. A printhead chip as claimed in claim 6, in which the energy transmitting means is defined by the ink-ejecting member having an ink-ejecting surface area that is a predetermined order of magnitude larger than an opening area of the ink ejection port so that a hydraulic advantage is achieved.

8. A printhead chip as claimed in claim 6, in which the energy transmitting means is in the form of a motion amplification means that is configured so that movement of the ink-ejecting member is a predetermined order of magnitude greater than that of the working end portion of the working member.

9. A printhead chip as claimed in claim 8, in which the motion amplification means includes a lever mechanism, the lever mechanism defining an effort arm that is connected to the working end portion of the working member and the ink-ejecting member defining a load arm, the load arm having an effective length that is a predetermined order of magnitude greater than an effective length of the effort arm, the lever mechanism further defining a fulcrum that connects the effort and load arms pivotally to one of the substrate and the nozzle chamber structure.

10. An inkjet printhead that includes at least one printhead chip as claimed in claim 1.